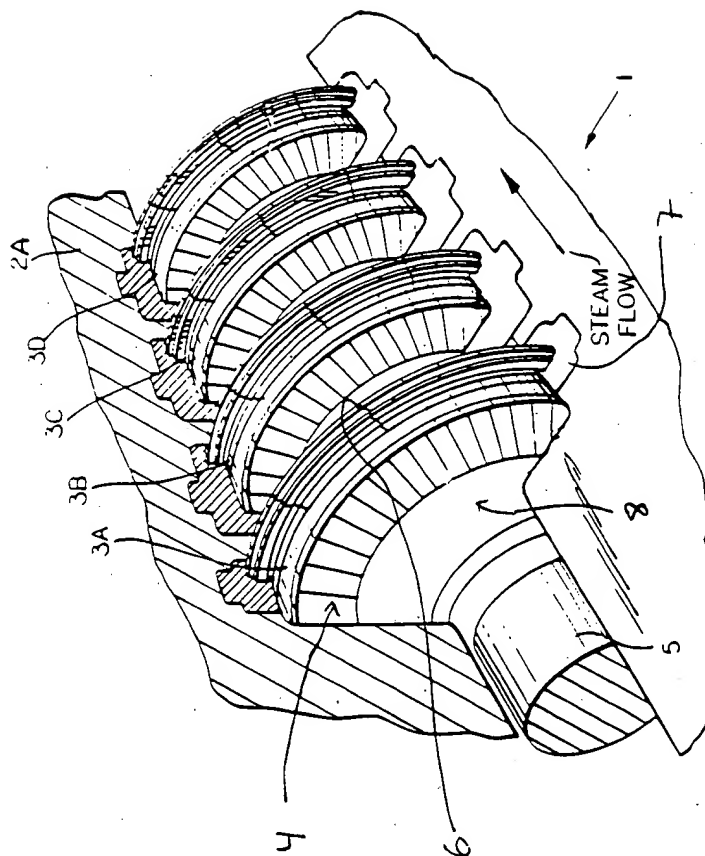


0916427-2256160



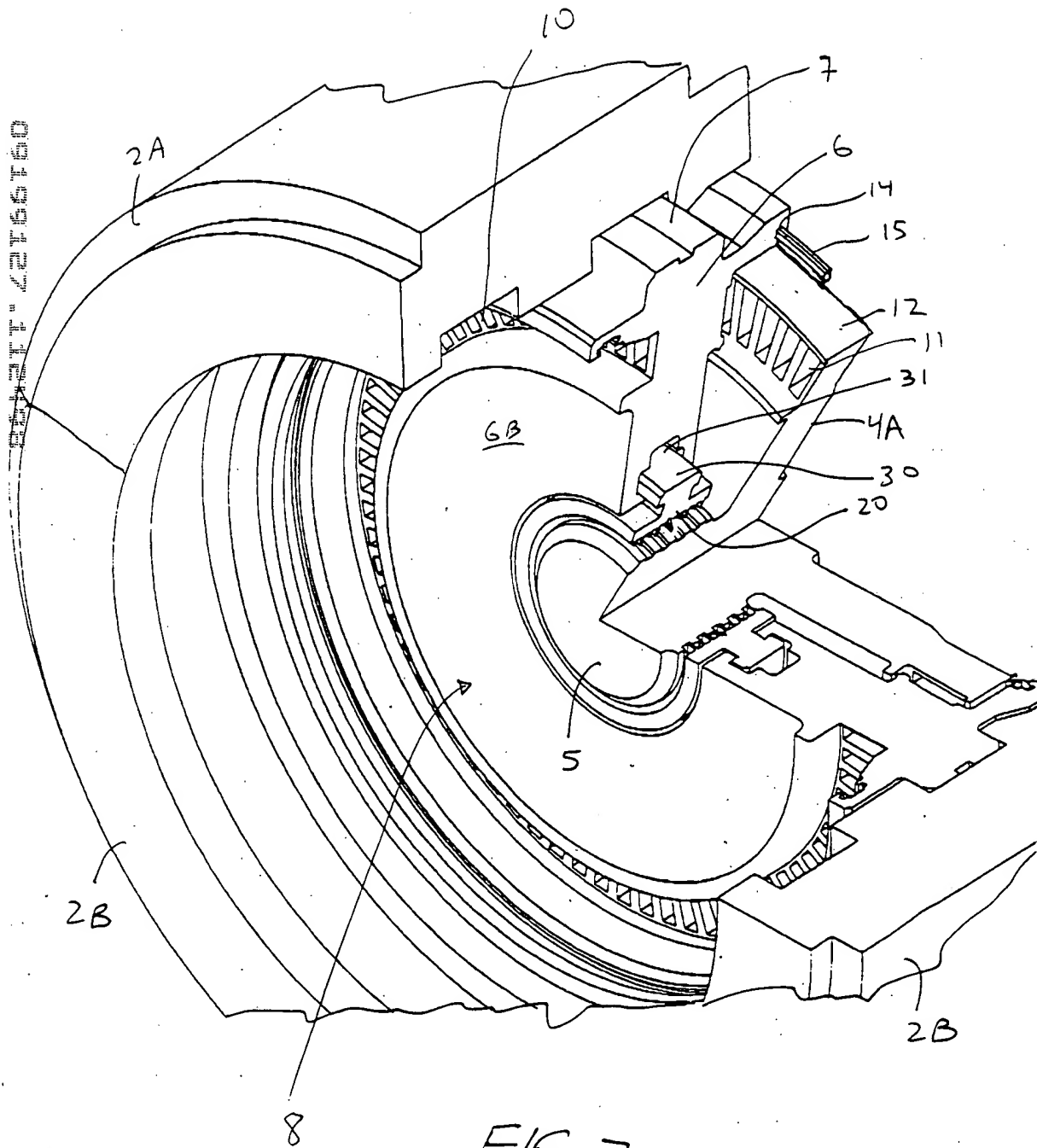


FIG. 2

09199127.112498

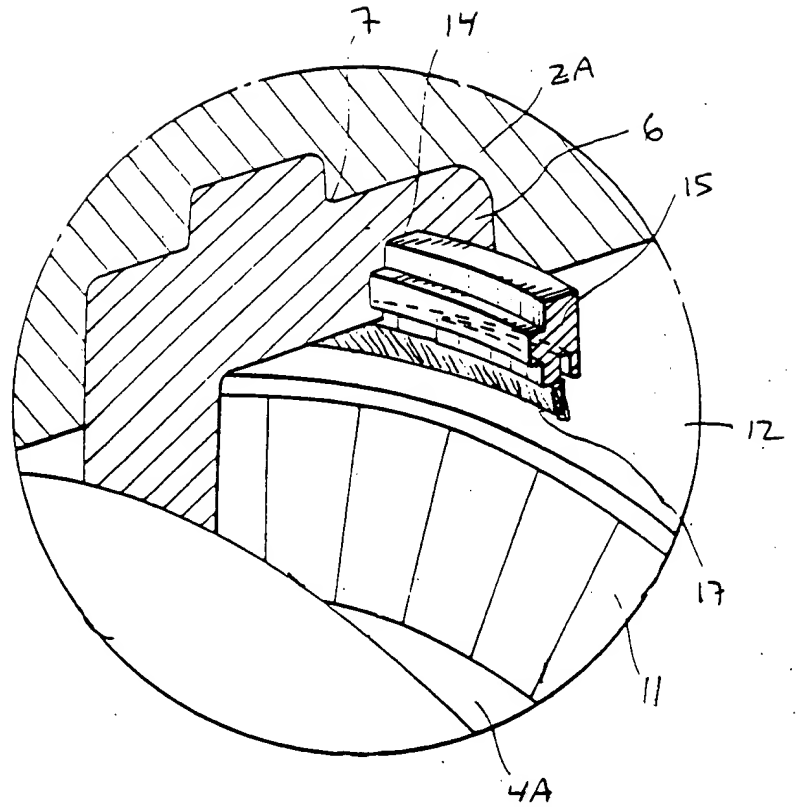


FIG. 2A

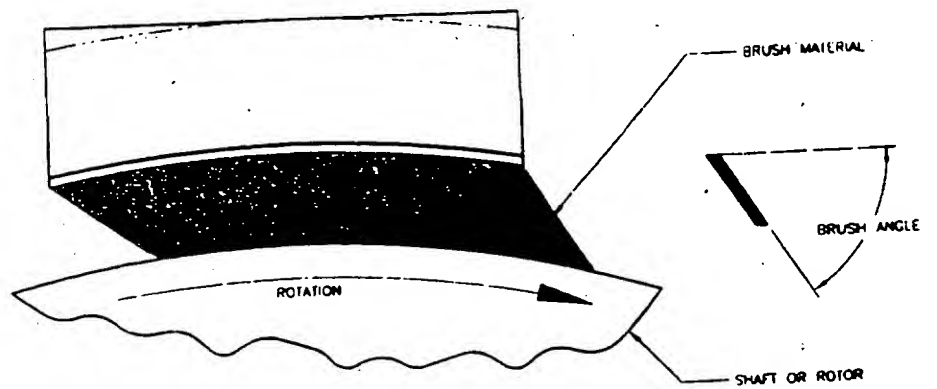


FIG. 2B

4/23

09459127.12498

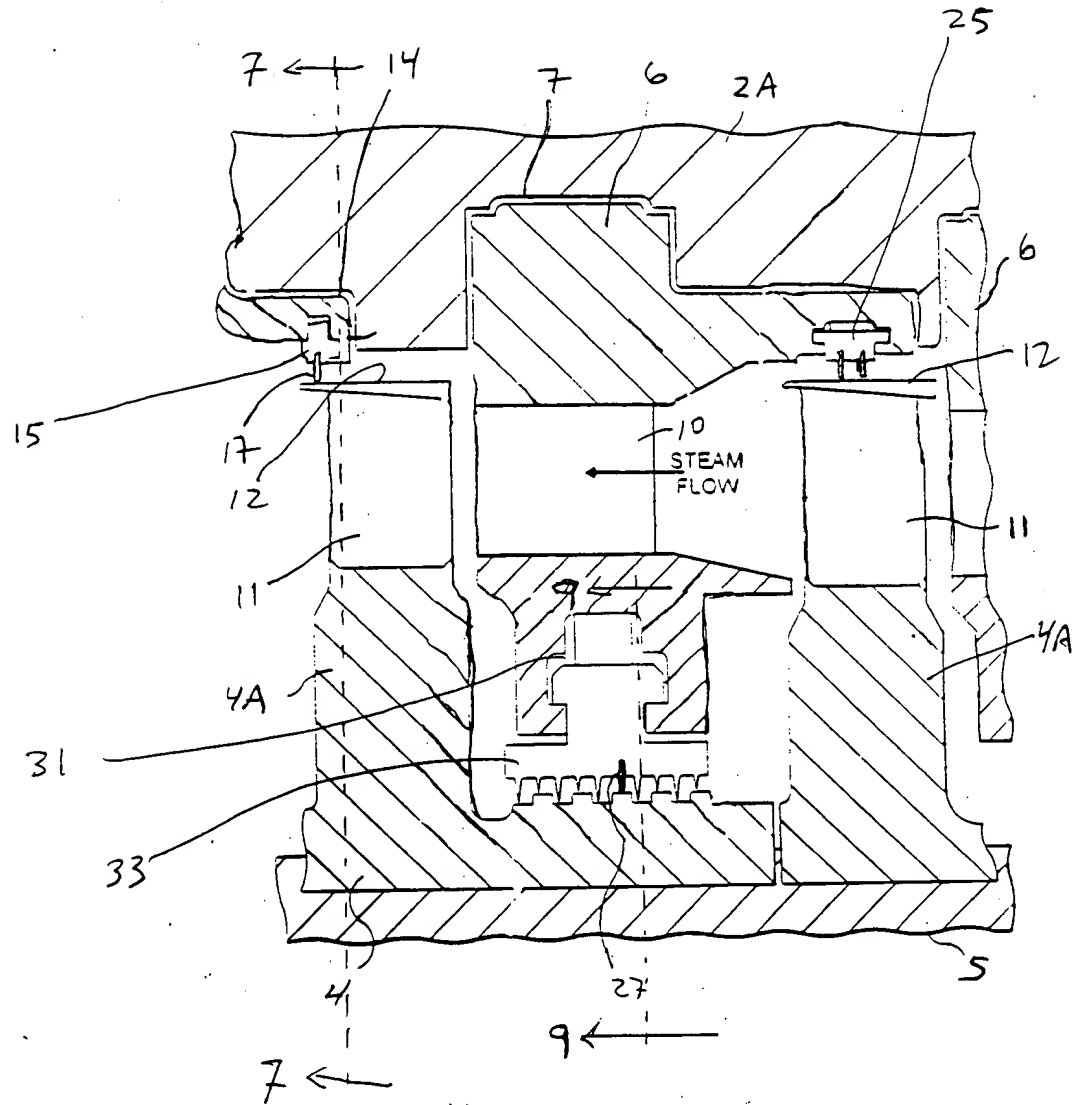
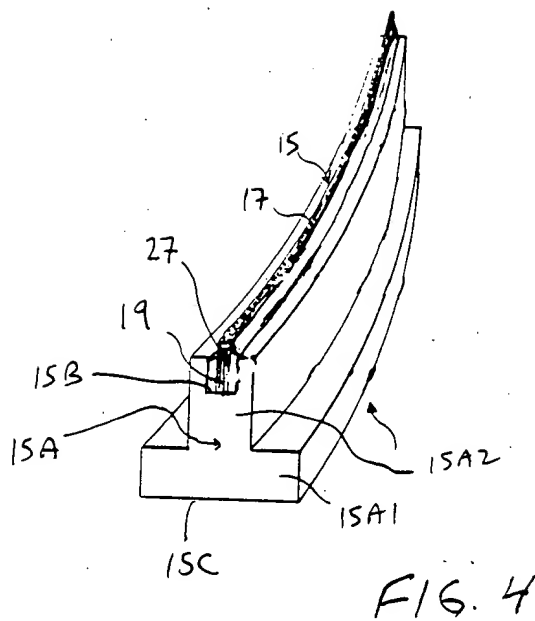
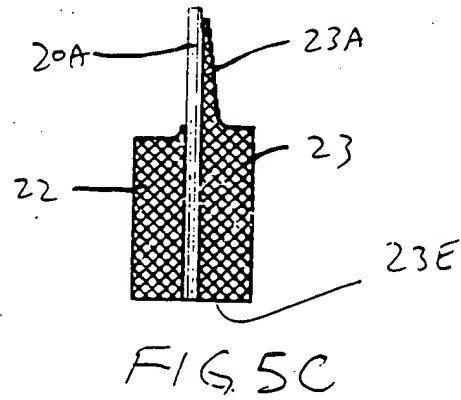
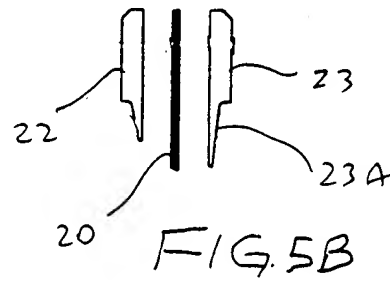
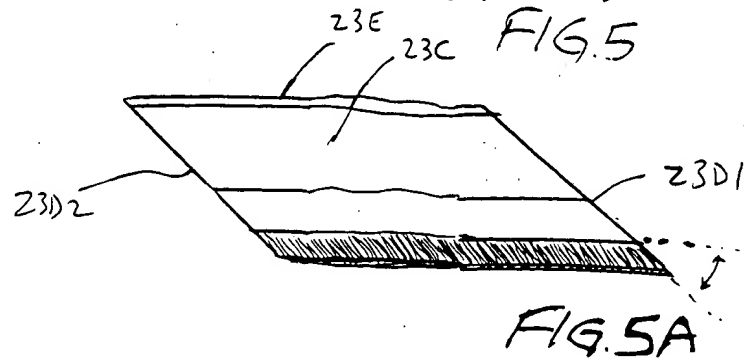
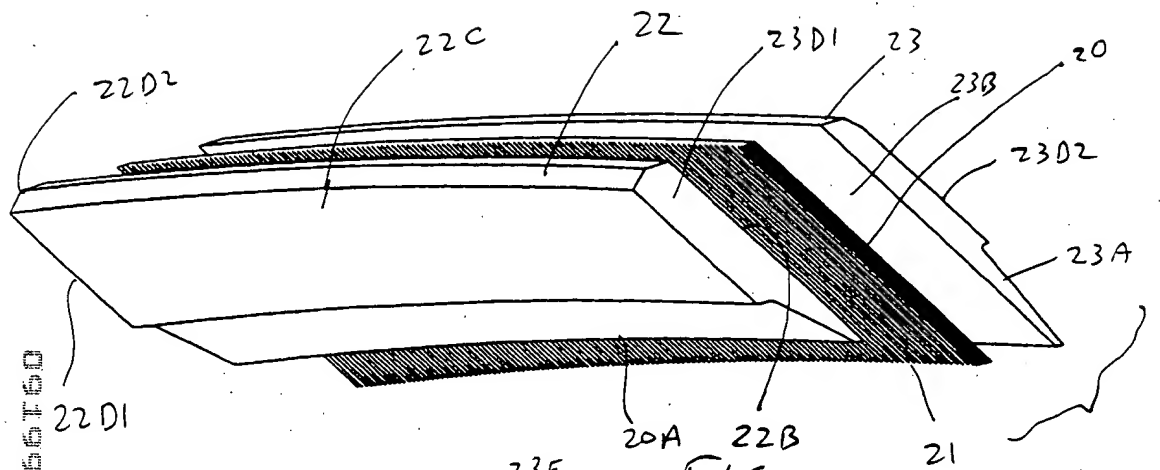


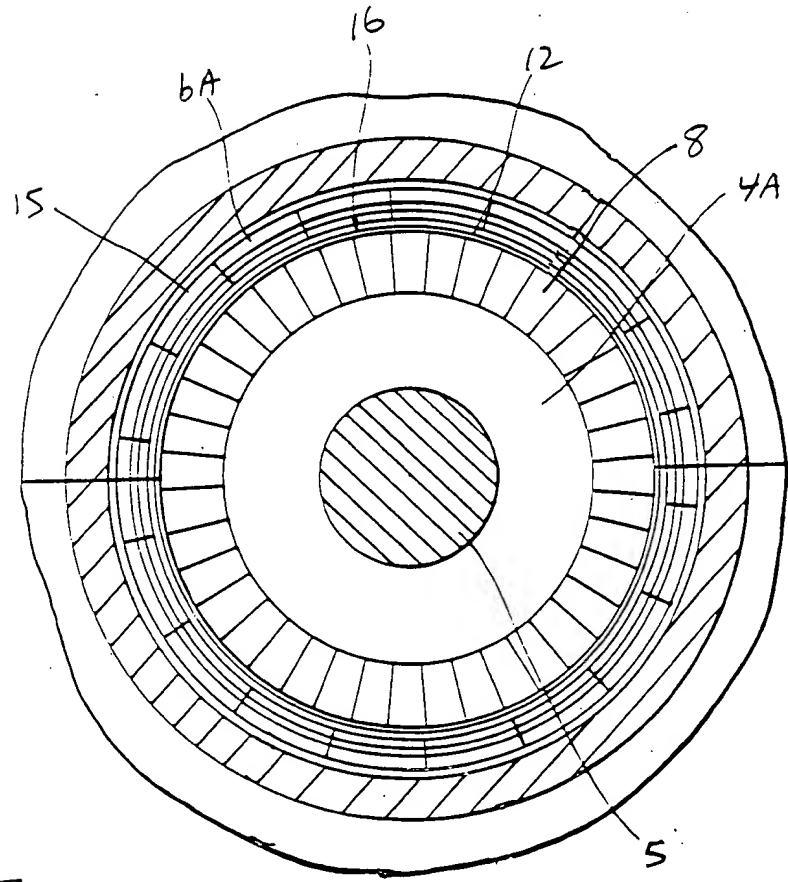
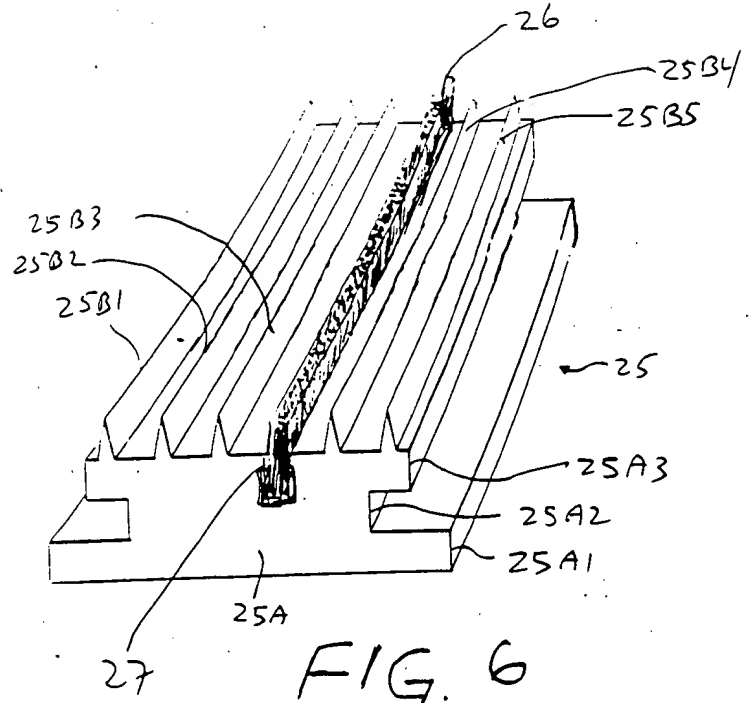
FIG. 3

09199127, 112198





09190127-12498



8/23

00199127, 112498

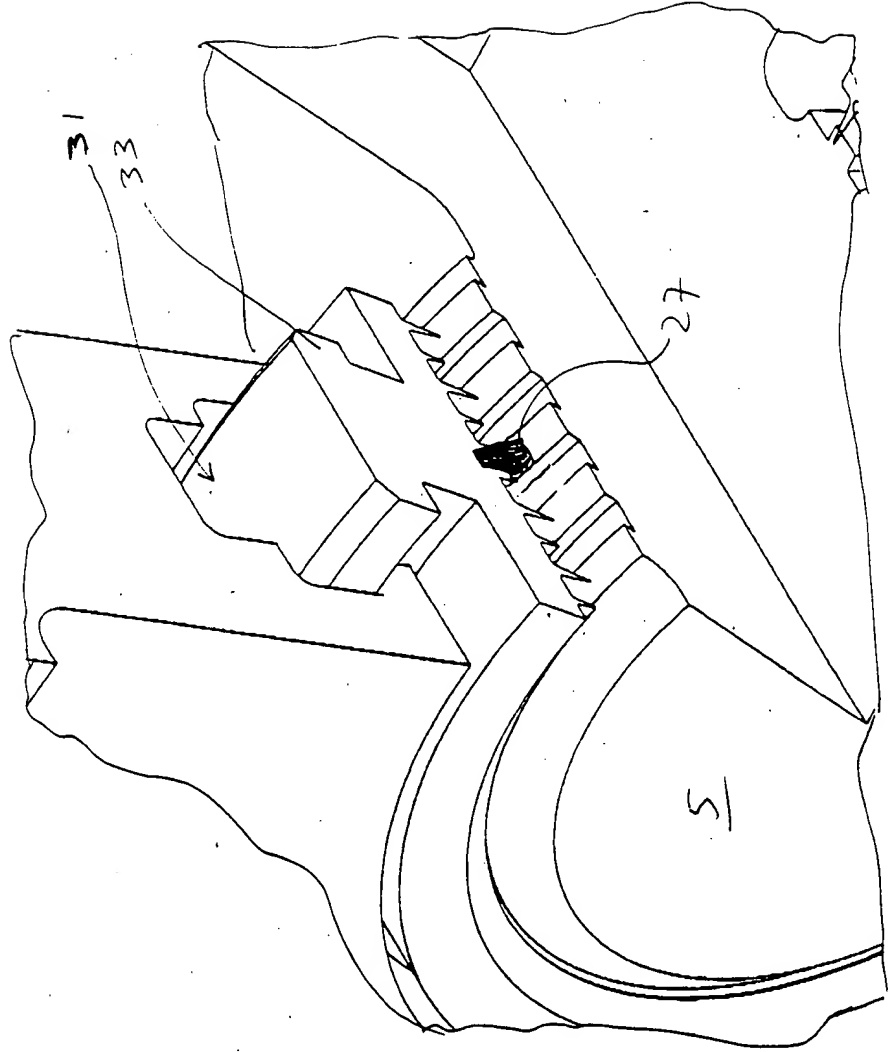
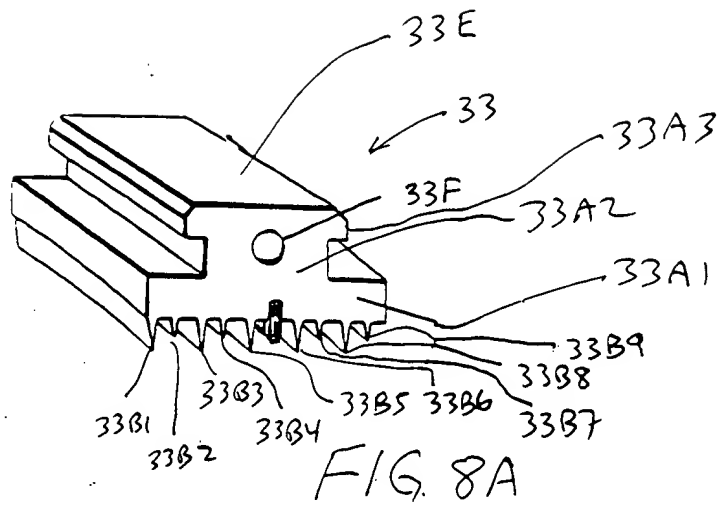


FIG. 8



9/23

09190127 42498



10/23

09190127.112498

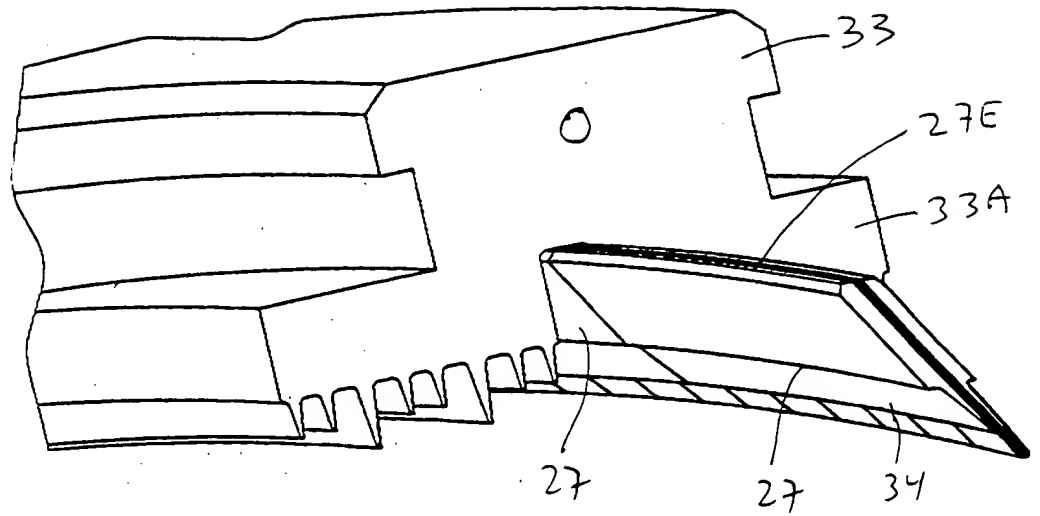


FIG. 8B

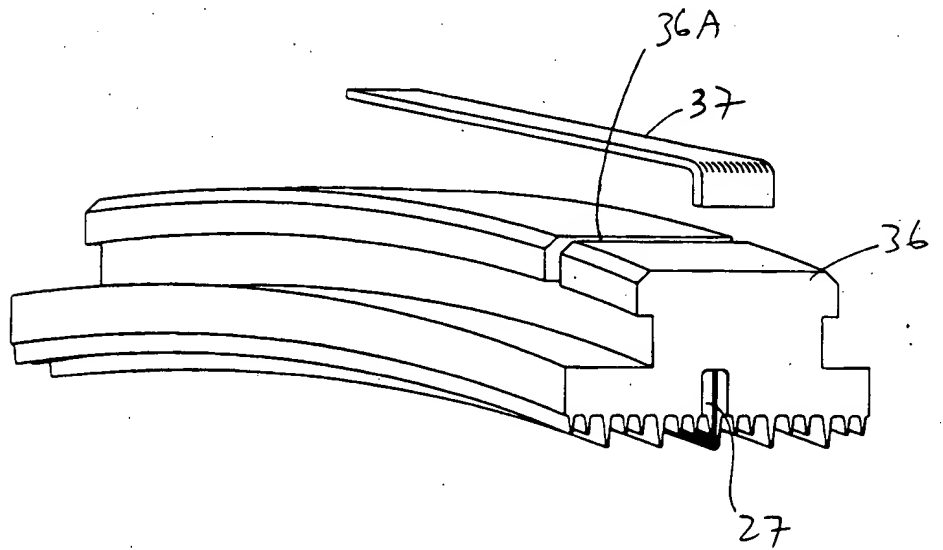


FIG. 8C

11/23

09159127.1 21498

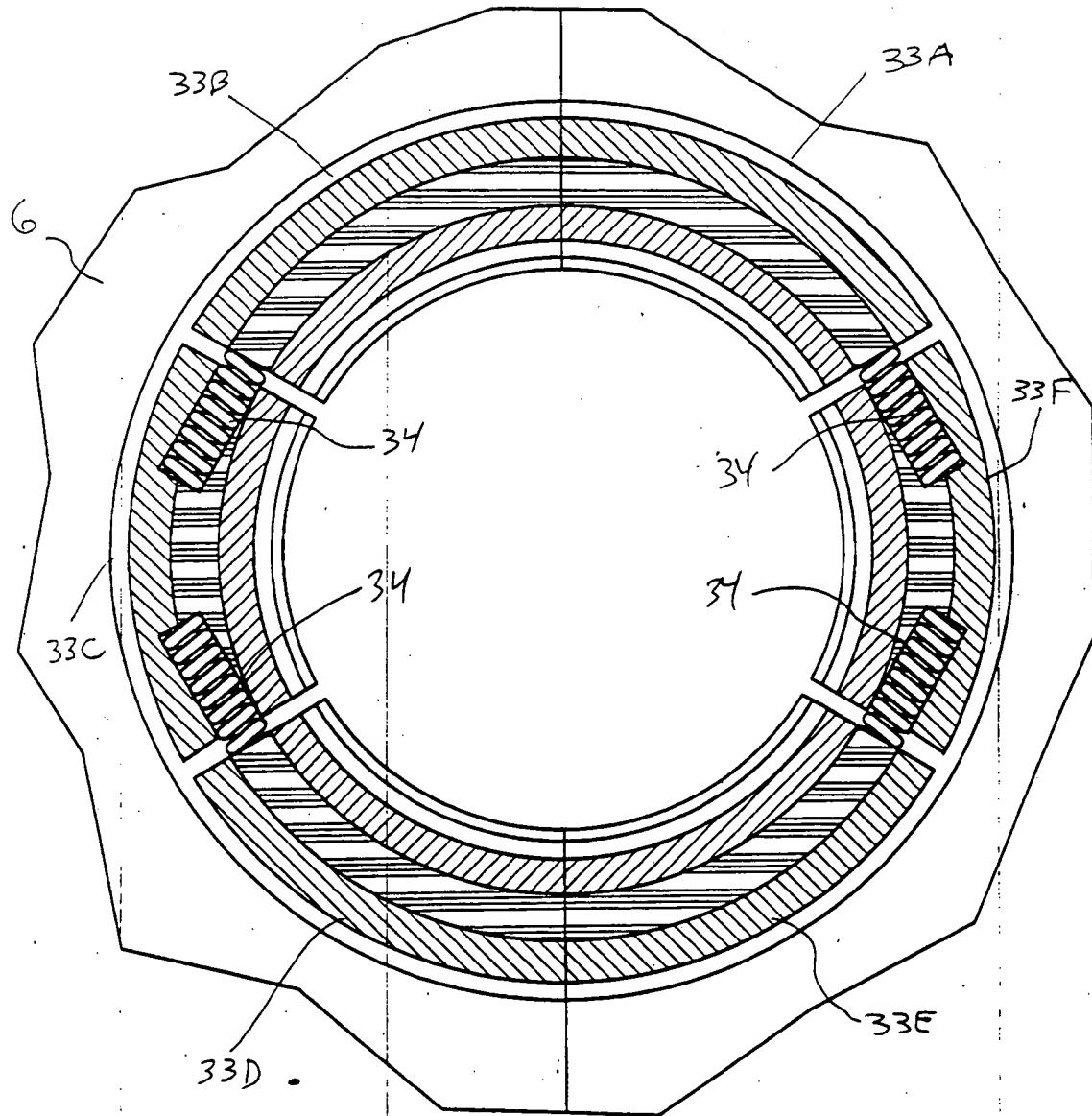


FIG. 9

12/23

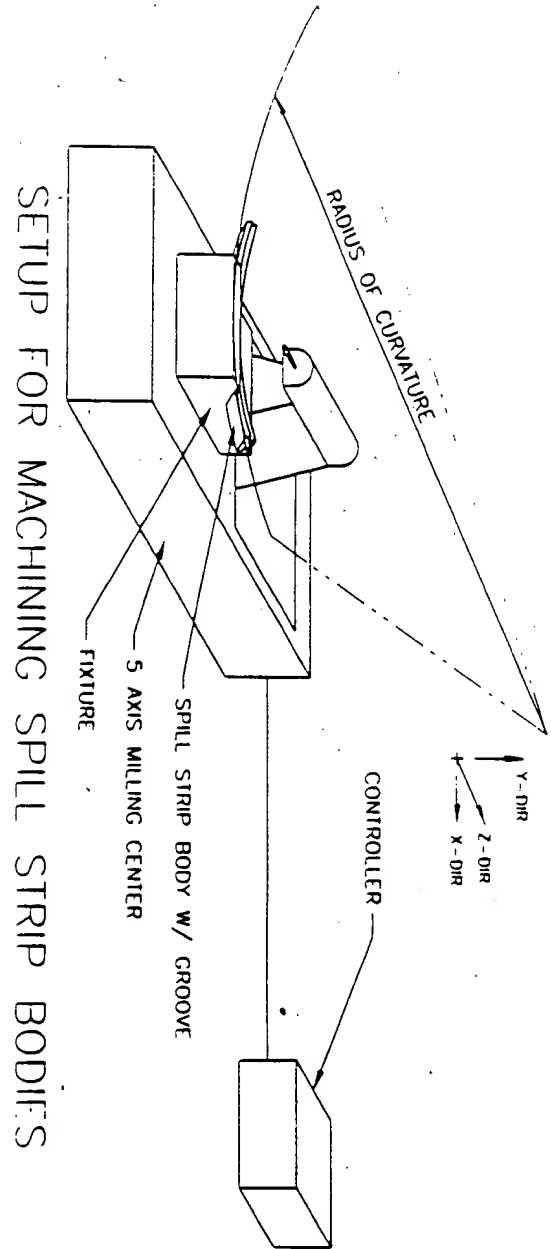
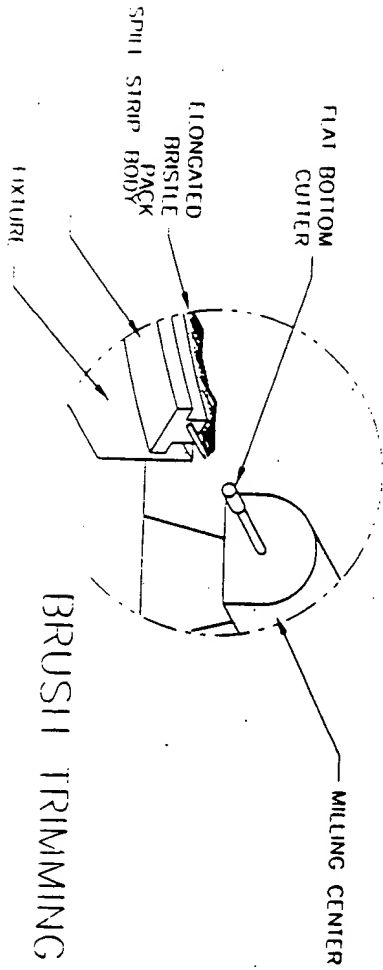


FIG 9A



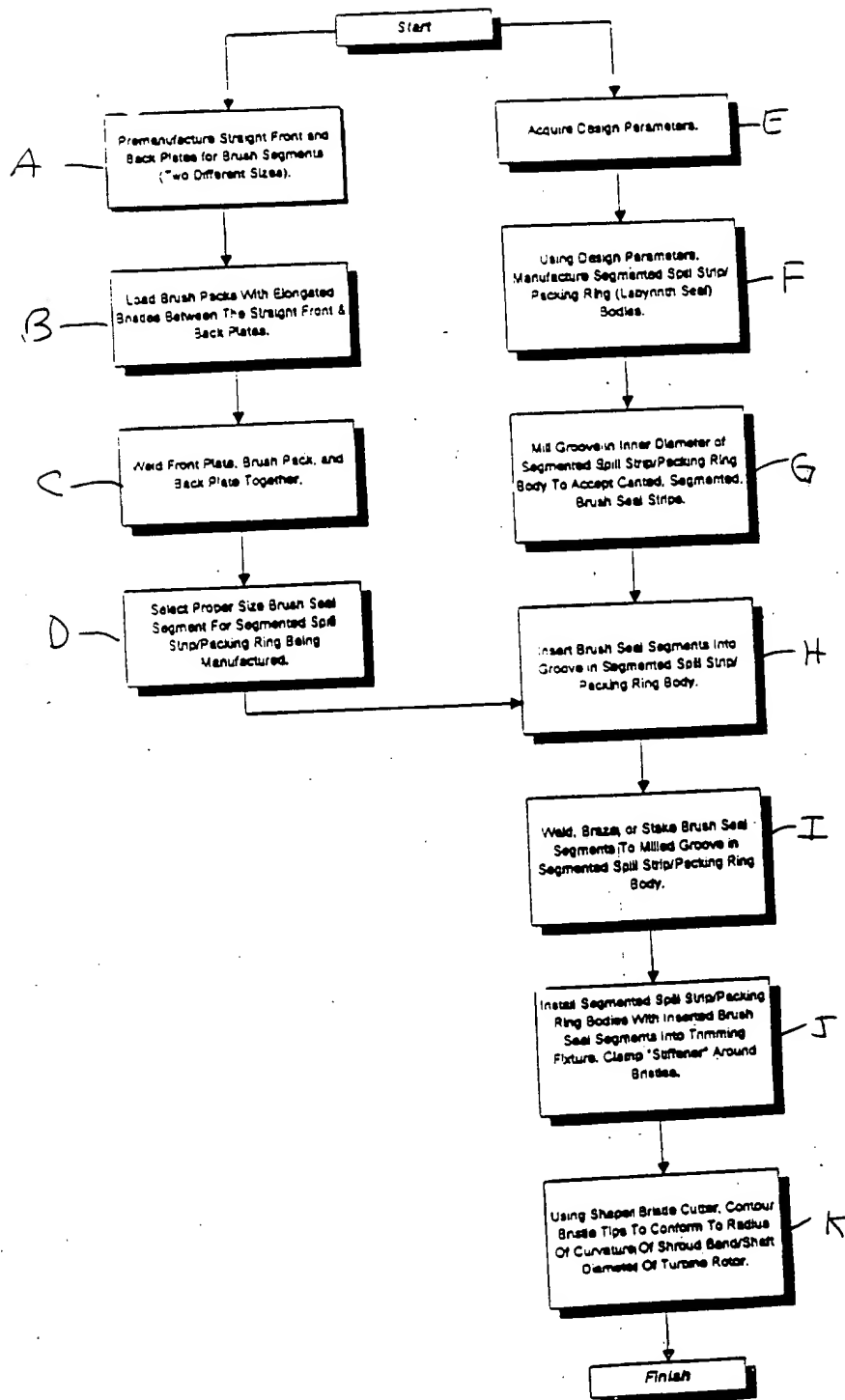
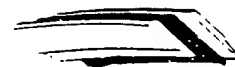
BRUSH TRIMMING OPERATION

FIG 9B

09499127.112498

13/23

# Manufacturing Flowchart



00109127 112490

FIG 10

14/23

## Segmented Brush Seal Drop Study

Based On Curved Segments

&gt;&gt;&gt;

Radius of Curvature for Segment 15 530

	Segment Length (in inches)										
	1/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
10	0.0006	0.0011	0.0025	0.0044	0.0069	0.0100	0.0178	0.0279	0.0404	0.0552	0.0725
21	0.0005	0.0010	0.0022	0.0038	0.0060	0.0087	0.0154	0.0242	0.0349	0.0478	0.0627
22	0.0005	0.0008	0.0019	0.0033	0.0052	0.0074	0.0133	0.0208	0.0300	0.0410	0.0538
23	0.0004	0.0007	0.0016	0.0028	0.0044	0.0063	0.0113	0.0177	0.0255	0.0348	0.0457
24	0.0003	0.0006	0.0013	0.0024	0.0037	0.0053	0.0094	0.0148	0.0214	0.0292	0.0383
25	0.0003	0.0006	0.0011	0.0019	0.0030	0.0044	0.0078	0.0122	0.0178	0.0240	0.0315
26	0.0002	0.0004	0.0009	0.0016	0.0024	0.0035	0.0062	0.0098	0.0141	0.0192	0.0252
27	0.0002	0.0003	0.0007	0.0012	0.0019	0.0027	0.0048	0.0075	0.0108	0.0148	0.0194
28	0.0001	0.0002	0.0005	0.0009	0.0014	0.0019	0.0035	0.0054	0.0078	0.0107	0.0140
29	0.0001	0.0001	0.0003	0.0006	0.0009	0.0013	0.0022	0.0035	0.0050	0.0069	0.0090
30	0.0000	0.0001	0.0002	0.0003	0.0004	0.0006	0.0011	0.0017	0.0024	0.0033	0.0044
31	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
32	0.0000	0.0001	0.0001	0.0003	0.0004	0.0006	0.0010	0.0016	0.0023	0.0031	0.0041
33	0.0001	0.0001	0.0003	0.0005	0.0008	0.0011	0.0020	0.0031	0.0044	0.0060	0.0079
34	0.0001	0.0002	0.0004	0.0007	0.0011	0.0016	0.0029	0.0045	0.0064	0.0088	0.0115
35	0.0001	0.0002	0.0005	0.0009	0.0014	0.0021	0.0037	0.0058	0.0083	0.0114	0.0149

Packing Ring Slot Diameter (in inches)

Drop (Δ Radius of Curvature) (in inches)

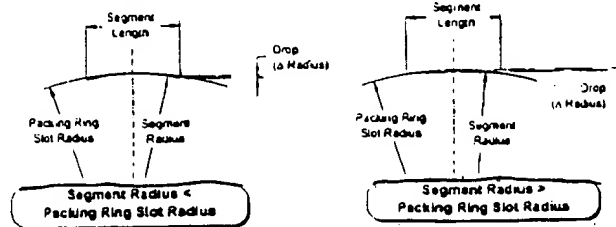


FIG. 11A

## Segmented Brush Seal Drop Study

Based On Curved Segments

&gt;&gt;&gt;

Radius of Curvature for Segment 11 500

	Segment Length (in inches)										
	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
20	0.0002	0.0004	0.0009	0.0016	0.0026	0.0037	0.0058	0.0103	0.0149	0.0204	0.0268
21	0.0001	0.0003	0.0006	0.0010	0.0016	0.0023	0.0042	0.0065	0.0094	0.0129	0.0170
22	0.0001	0.0001	0.0003	0.0005	0.0008	0.0011	0.0020	0.0031	0.0045	0.0062	0.0081
23	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
24	0.0001	0.0001	0.0003	0.0005	0.0007	0.0010	0.0018	0.0029	0.0041	0.0058	0.0074
25	0.0001	0.0002	0.0005	0.0009	0.0014	0.0020	0.0035	0.0055	0.0079	0.0108	0.0142
26	0.0002	0.0003	0.0007	0.0013	0.0020	0.0028	0.0050	0.0079	0.0114	0.0158	0.0205
27	0.0002	0.0004	0.0009	0.0016	0.0025	0.0036	0.0065	0.0101	0.0147	0.0200	0.0263
28	0.0003	0.0006	0.0011	0.0019	0.0030	0.0044	0.0078	0.0122	0.0177	0.0241	0.0317
29	0.0003	0.0006	0.0013	0.0023	0.0036	0.0051	0.0090	0.0142	0.0205	0.0279	0.0367
30	0.0004	0.0006	0.0014	0.0025	0.0040	0.0057	0.0102	0.0160	0.0231	0.0315	0.0413
31	0.0004	0.0007	0.0016	0.0028	0.0044	0.0063	0.0113	0.0177	0.0255	0.0348	0.0457
32	0.0004	0.0008	0.0017	0.0031	0.0048	0.0069	0.0123	0.0192	0.0278	0.0379	0.0498
33	0.0005	0.0008	0.0019	0.0033	0.0052	0.0074	0.0132	0.0207	0.0299	0.0409	0.0538
34	0.0005	0.0009	0.0020	0.0036	0.0058	0.0078	0.0140	0.0221	0.0319	0.0436	0.0572
35	0.0005	0.0009	0.0021	0.0037	0.0058	0.0084	0.0150	0.0234	0.0338	0.0462	0.0606

Packing Ring Slot Diameter (in inches)

Drop (Δ Radius of Curvature) (in inches)

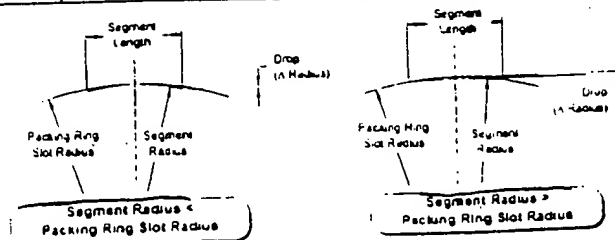
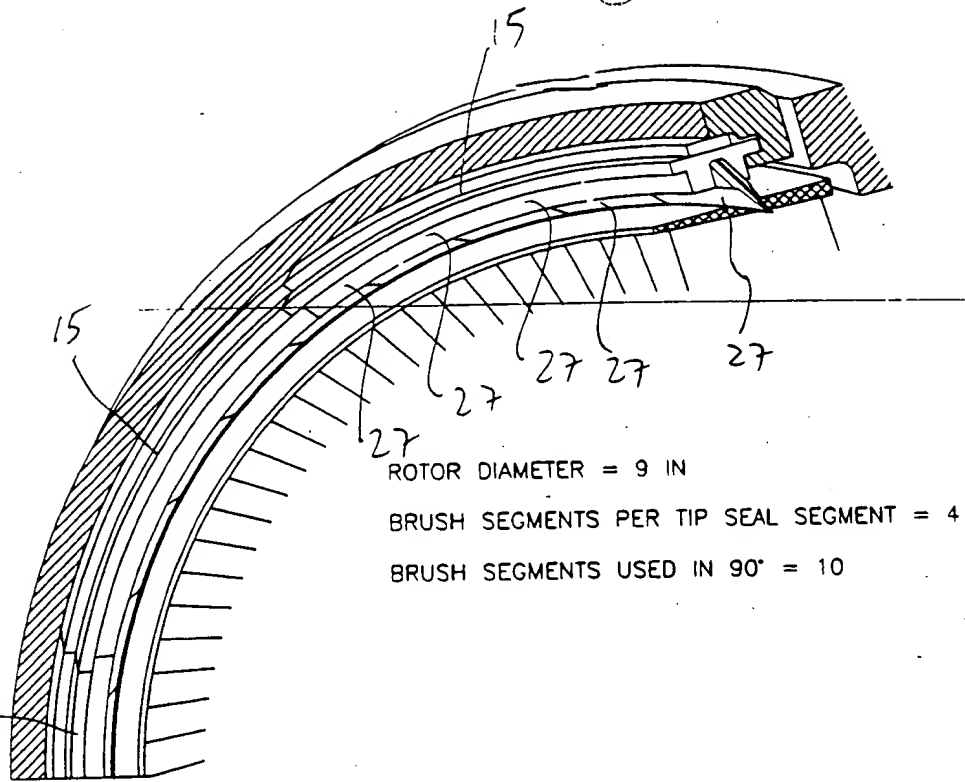


FIG. 11B

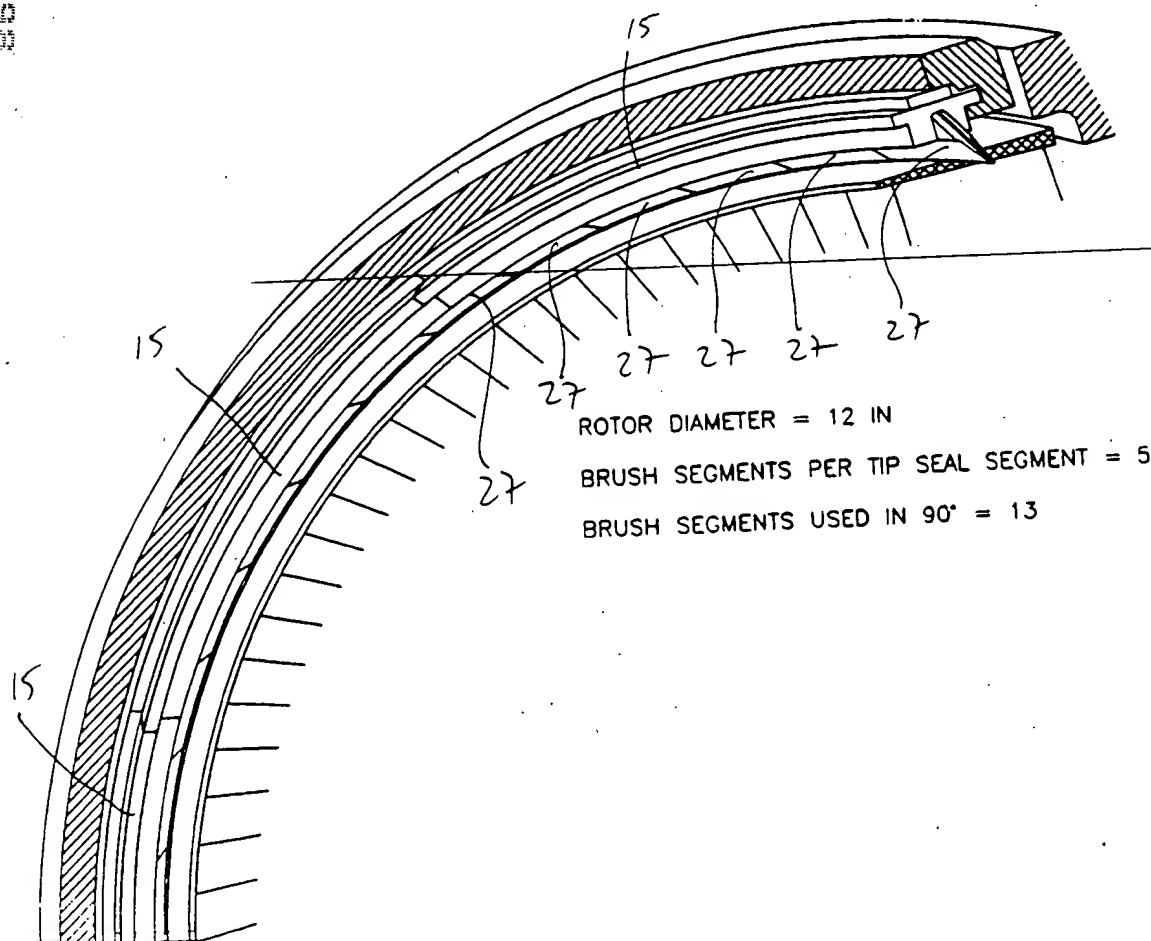
15/23

00190127 112450



ROTOR DIAMETER = 9 IN  
BRUSH SEGMENTS PER TIP SEAL SEGMENT = 4  
BRUSH SEGMENTS USED IN 90° = 10

FIG. 12A



ROTOR DIAMETER = 12 IN  
BRUSH SEGMENTS PER TIP SEAL SEGMENT = 5  
BRUSH SEGMENTS USED IN 90° = 13

FIG. 12B

16/23

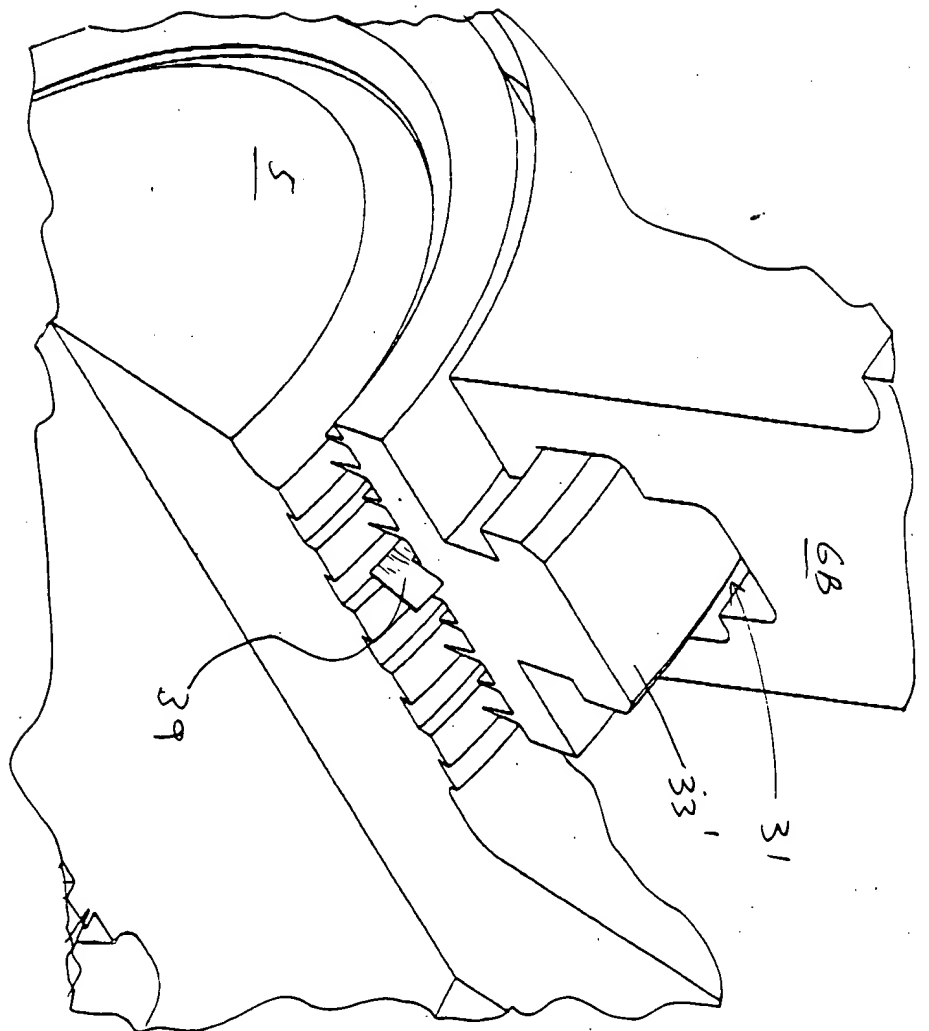


FIG. 13

09109127.112450



09109127.412458

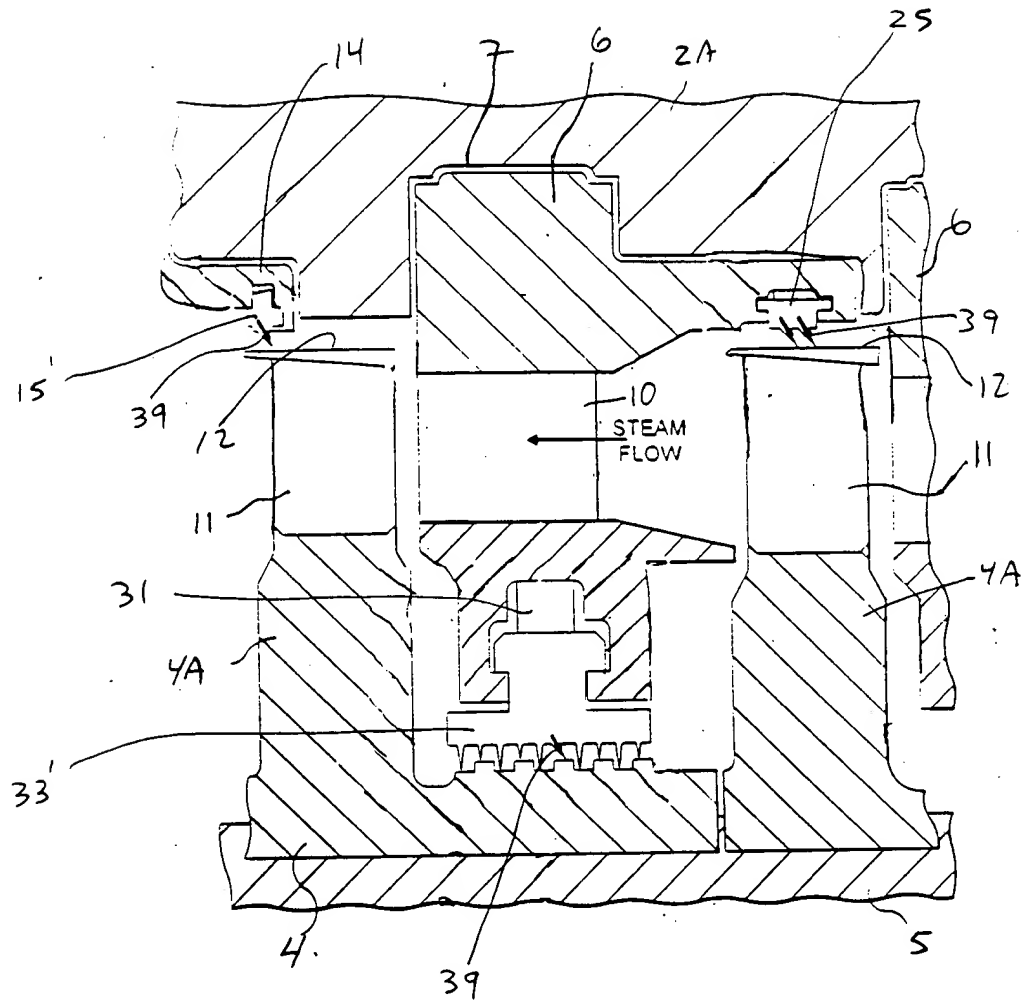


FIG. 14

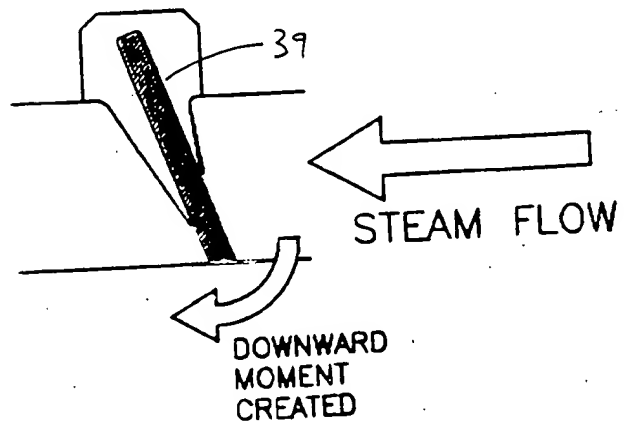


FIG. 14A

18/23

00109127 412450

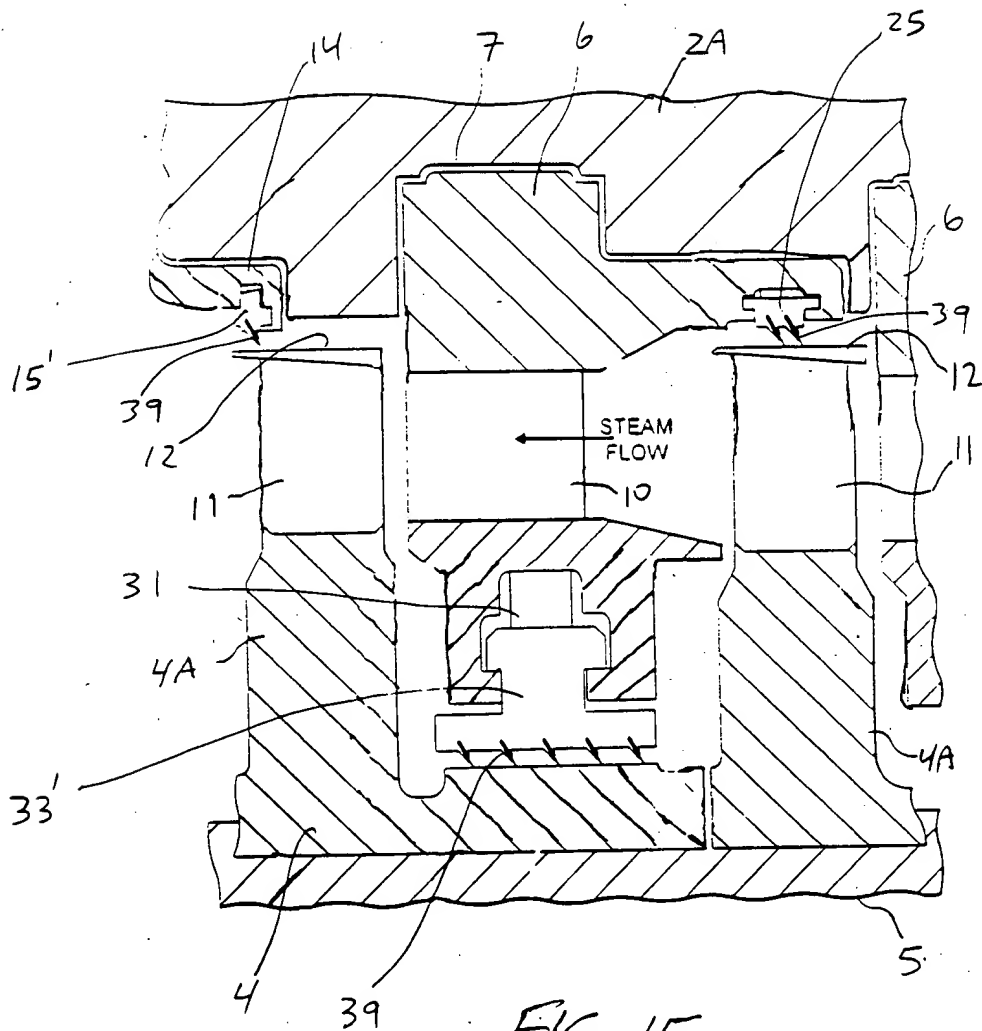


FIG. 15

19/23

09199127 "112438

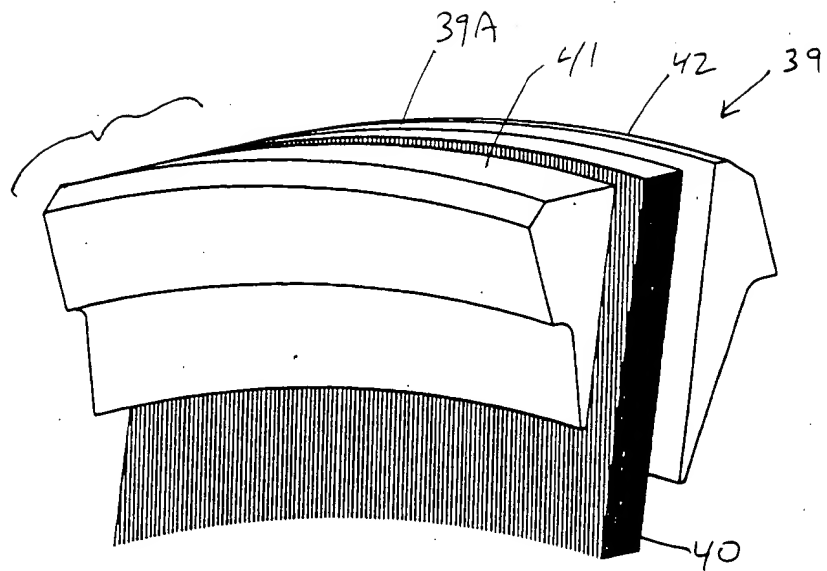


FIG. 16

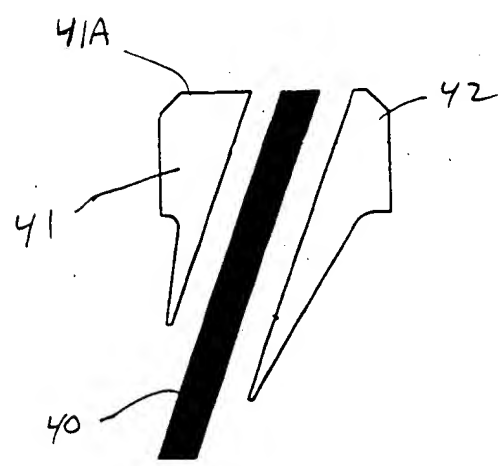


FIG. 16A

20/23

# Manufacturing Flowchart

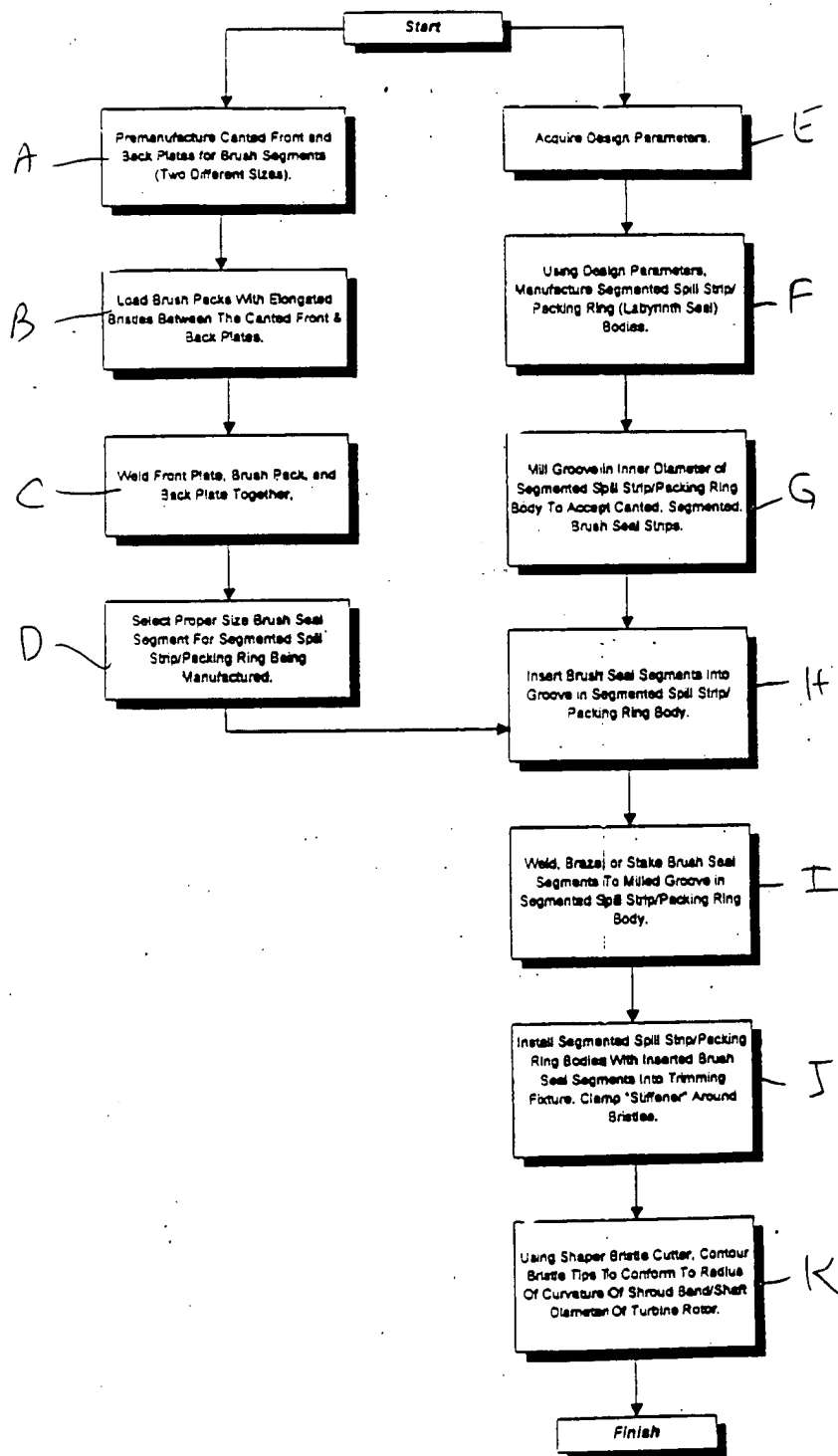


FIG. 17

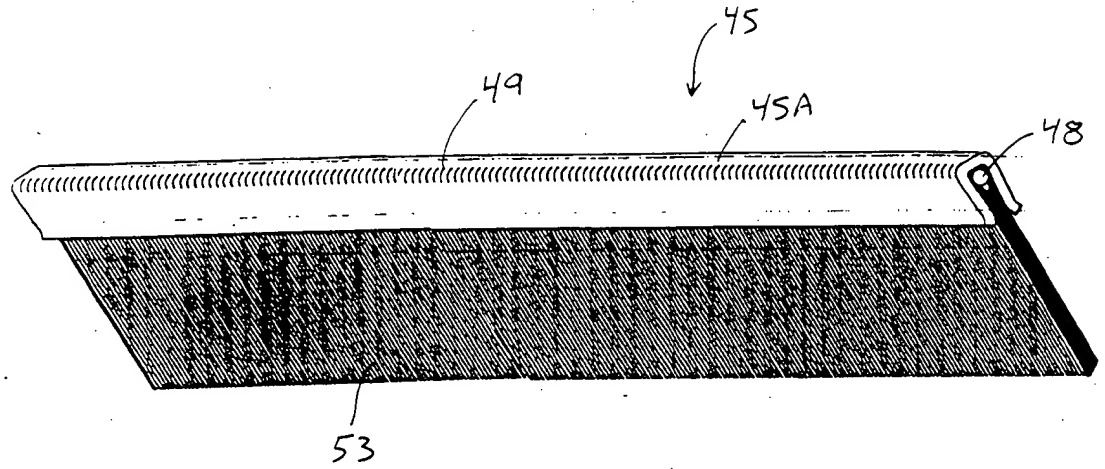


FIG. 18

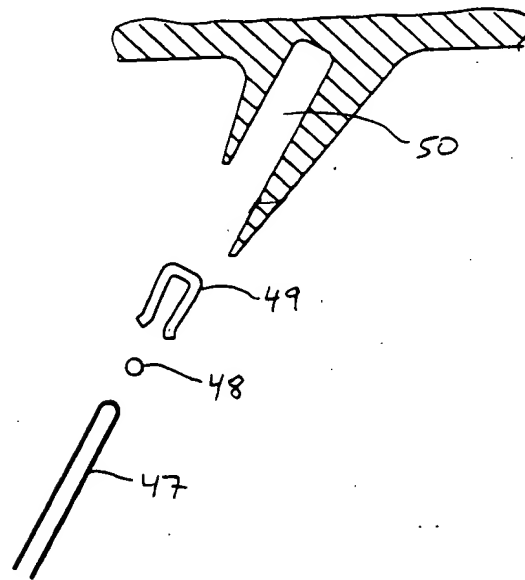


FIG. 18A

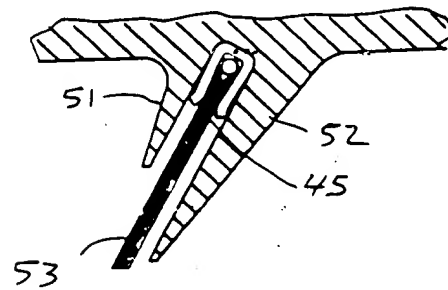


FIG. 18B

00190127-112498

## Manufacturing Flowchart

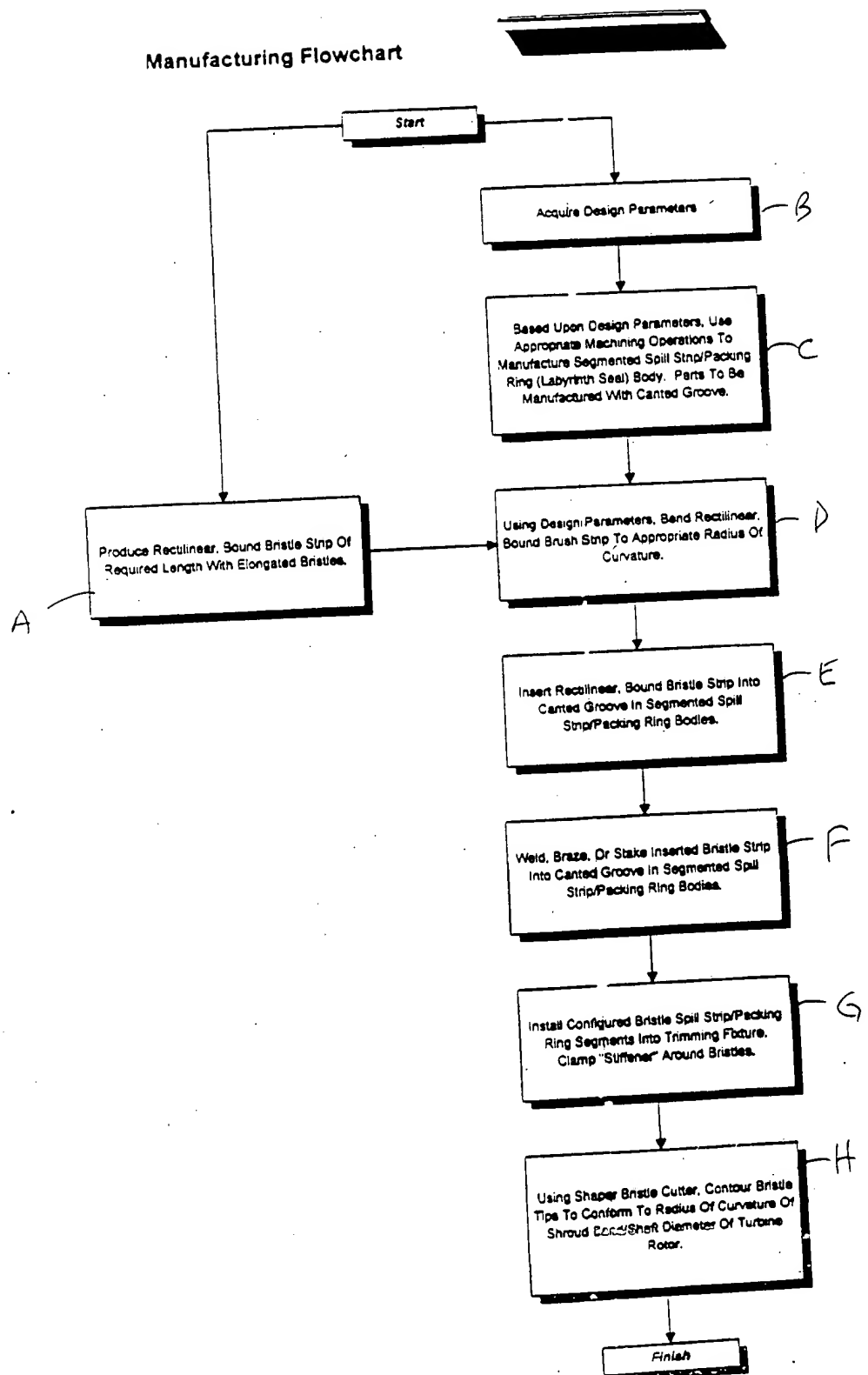
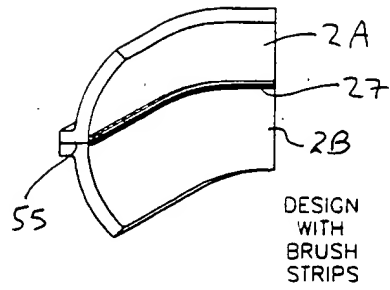


FIG. 19

BRUSH SEALING HORIZONTAL JOINT OF A TURBINE SHELL



DESIGN WITH BRUSH STRIPS

FIG. 20

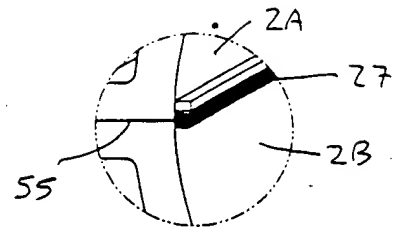


FIG. 20A

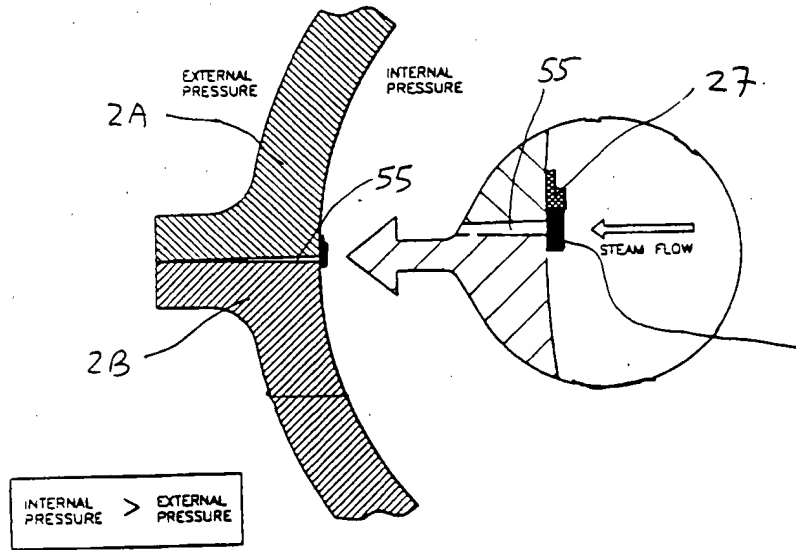
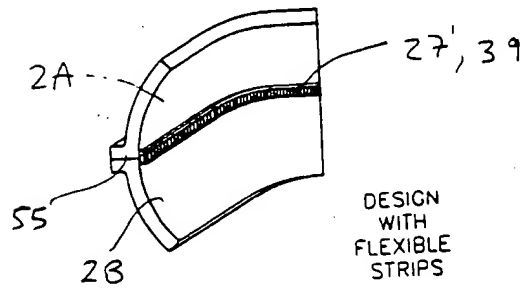


FIG. 20B



DESIGN WITH FLEXIBLE STRIPS

FIG. 21

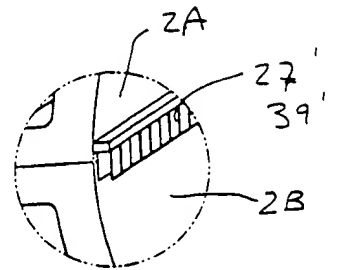


FIG. 21A

00190127 42458